

was anaërobiosis at the bottom of the uncovered tubes. Conditions for aerobic growth were found on the surface of those tubes of the media which were not covered with oil. There were thus studied eight culture tubes inoculated with 10 c.c. of blood drawn from each of 21 cases and eight culture tubes inoculated with 10 to 20 c.c. of spinal fluid drawn from each of 16 cases, making a total of 296 tubes examined. The results of the examination of the cultures were negative; the cultures either remained sterile, or on occasional tube showed a growth which was evidently a contamination.

The Transmissibility of Pellagra. — GOLDBERGER (*Public Health Reports*, November 17, 1916, xxxi, No. 46) subjected sixteen volunteers to experiment. With one exception all were men and varied in age from twenty-six to forty-two years. No restraints were imposed on their customary habits or activities. Seventeen cases of pellagra of various types and of different grades of severity furnished some one or more of the experimental materials. The materials were blood, nasopharyngeal secretions, epidermal scales from pellagrous lesions, urine and feces. Blood was furnished by 4 of the cases, nasopharyngeal secretions by 4, epidermal scales by 5, and urine or feces by 16, of whom 10 furnished both urine and feces, 3 urine without feces, and 3 feces without urine. Blood was administered by intramuscular or subcutaneous injection; secretions by application to the mucosa of the nose and nasopharynx; scales and excreta by mouth. Both urine and feces were ingested by 15 of the volunteers, 5 of whom also took blood, secretions, and scale. The experiments were performed at four widely separated localities (Washington, D. C.; Columbia, S. C.; Spartanburg, S. C.; and New Orleans, La.) at which different groups of the volunteers were assembled. Observation has been maintained by association with a majority of the volunteers and by visits of inspection, supplemented by reports from the volunteers themselves, 13 of whom are physicians, and by reports from other medical officers of the service with whom they are associated. During a period of between five and seven months none has developed evidence justifying a diagnosis of pellagra. These experiments furnish no support for the view that pellagra is a communicable disease; they materially strengthen the conclusion that it is a disease essentially of dietary origin, brought about by a faulty, probably "deficient" diet.

The Effect of Cold upon Malaria Parasites in the Mosquito Host. — KILG (*Jour. Exper. Med.*, March 1, 1917, xxv, No. 3) reports experiments showing that the parasite of tertian malaria in the mosquito host is able to survive exposure to a temperature of 30° F. for a period of two days, 31° F. for four days, and a mean temperature of 46° F. for seventeen days. In a smaller series of tests the sporozoites of the estivo-autumnal parasite have shown a resistance to temperature as low as 35° F. for twenty-four hours.

The Application of the Statistical Method to Public Health Research. — DROXIS (*Am. Jour. Public Health*, vii, No. 1) discusses the common fallacies and errors that arise in statistical investigations in the field of public health and hygiene. He divides statistical investigations into three stages: (1) Defining the scope of the inquiry, planning

the inquiry schedule, and collecting the data; (2) editing, classifying and tabulating the data; and (3) analyzing and interpreting the results. He points out with many illustrations the fallacies and errors that arise at each stage. In the first stage of public health investigations, the author thinks, errors often result from poorly devised questionnaires and from the incomplete registration of facts. In the second stage, he emphasizes the importance of properly editing the schedules before tabulation and of returning defective schedules to the original source of correction. The use of standard systems of classification is emphasized and errors that result from indifference to the use of standard systems are considered. The gravest errors in the use of the statistical method in public health work, the writer says, arise in the third stage of inquiry, *i. e.*, in the interpretation and analysis of the results. The investigator should make every effort to avoid errors of this kind because it is in this part of the inquiry that the public is most interested. Among the commoner fallacies of analysis are those which arise from the comparisons of statistics that are essentially incomparable, from a confused idea that "proportions" are somehow equivalent to "rates," from the drawing of conclusions from too few cases and the like. In conclusion, he points out the necessity for extreme caution in the collection, preparation, and interpretation of data in public health work. This is necessary if the general public is to be expected to support health movements based on the results of such investigations. Health officers will find in this paper many practical suggestions, that will help them in the research side of their work.

Pertussis Vaccine.—PAUL LUTTINGER (*Jour. Am. Med. Assn.*, May 19, 1917, lxxviii, No. 20, 1461) gives a summary of the results of the whooping-cough clinic of the Department of Health of the City of New York. The work was carried out under the supervision of Dr. William H. Park, and the conclusions reached are that the results obtained at the clinic, and also by over 180 private physicians and health officers would warrant the routine administration of pertussis vaccine for both curative and prophylactic purposes. The best time to institute the vaccine treatment, except as a prophylactic, is the first and second week of the paroxysmal stage. When the proper vaccine is given and the method of the department is employed, the disease is materially reduced in duration and severity. The presence of subconjunctival hemorrhages in prophylactic cases which were protected by the vaccine seems to point to its specific immunizing action against the paroxysms and to the fallacy of the hitherto accepted theory that these hemorrhages are due to the violence of the cough.

The Possibility of Typhoid Infection through Vegetables.—MELICK (*Jour. Infect. Dis.*, July 1, 1917, p. 28) reports that the longevity of *B. typhosus* in soils has shown considerable variations under like conditions in the open. The old strains (1 and 3) survived in garden soils fifty and fifty-three days, while the viability of fresh cultures (strains 4 and 5) was thirty-two and forty-three days, respectively. In sandy soil the longevity of strain 3 was thirty-six days; that of strain 4, twenty-nine days. In three outdoor experiments, extending from May to September, *B. typhosus* was isolated from garden soil inoculated